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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/831,913 | 05/10/2002 | Hiroshi Yamakawa | 208524US3PCT | 1931 |
| 22850 | 7590 | 07/12/2005 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | LOPEZ, CARLOS N | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1731 | |

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,913

Applicant(s)

YAMAKAWA ET AL.

Examiner

Carlos Lopez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 6-10, 14-16, 19, 20, 22, 25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-13, 17-18, 21, 23-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/10/05 has been entered.

It is noted to applicant that newly filed claims 25-26, which are dependent on non-elected claim 6, will be withdrawn from consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 11-12, 17 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 836,560 ('560). The '560 patent discloses an apparatus for bending a glass sheet. As shown in figure 4, a tunnel like heating furnace comprises a bending mold "M", integral roof heaters 54 deemed as the claimed first group of plurality of heating elements, and heaters 88 which are deemed as the claimed second group of plurality of heating elements attached separably to the inner wall surface of the heating furnace. As further noted in lines 62-78 of '560, heaters 88 are raised and lowered by a

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support housing, thus reading on applicant's claimed structure on which the second of plurality of heaters are mounted.

The reason for raising and lowering the heaters 88 is to provide intense radiation to areas of the glass sheet that requires a severe bend (Page 1, Lines 79-87). Since heaters 88 are electrical heaters (See Page 3, lines 58-59 and lines 65-73), it is inherent that the temperature of each heater may be individually controlled as claimed by applicant by regulating the supplied voltage as similarly done to the first group of heaters (See Page 2, lines 80-89).

The newly limitation that the second group of heaters, deemed as heaters 88 of '560, are disposed two-dimensionally, is deemed to be met by '560 since the heaters 88 are at least a 2-dimensional object having a length and width, for which the heaters are thus disposed two-dimensionally in the heating furnace.

As for claim 2, the heaters 88, deemed as the second group heaters, may be used to heat one portion of the glass sheet to a greater temperature than another portion and the position relative to the glass may be adjusted (Page 1, lines 54-61 and lines 70-78).

As for claims 3-4, 11-12 and 17, as noted above the crease heaters are suspended by cables 90 and 91 as shown in figure 3 and, as noted above, its distance relative to the inner ceiling wall may be adjusted in order to control the intensity of radiation being applied to the glass (see Page 1, lines 54-61 and lines 70-78).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 11-12, 17, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 836,560 ('560) in regards to the optional limitation of having the heaters disposed along the center line of the glass sheet.

The '560 patent discloses an apparatus for bending a glass sheet. As shown in figure 4, a tunnel like heating furnace comprises a bending mold "M", integral roof heaters 54 deemed as the claimed first group of plurality of heating elements, and heaters 88 which are deemed as the claimed second group of plurality of heating elements attached separably to the inner wall surface of the heating furnace. As further noted in lines 62-78 of '560, heaters 88 are raised and lowered by a support housing, thus reading on applicant's claimed structure on which the second of plurality of heaters are mounted.

The reason for raising and lowering the heaters 88 is to provide intense radiation to areas of the glass sheet that requires a severe bend (Page 1, Lines 79-87). Since heaters 88 are electrical heaters (See Page 3, lines 58-59 and lines 65-73), it is inherent that the temperature of each heater may be individually controlled as claimed by applicant by regulating the supplied voltage as similarly done to the first group of heaters (See Page 2, lines 80-89).

The optional limitation instantly claimed now requires that the second group of heating elements be disposed along the center-line of the glass sheet. While '560 does not explicitly disclose the claimed limitation, it does note that the secondary heaters 88 provide intense radiation to areas of the glass sheet that requires a severe bend. Hence, it is clearly taught by '560 that the location of the heater will be determined where areas of the glass sheet is desired to have a bend. Thus, the claimed limitation of having the heating elements along the center line of the glass sheet is clearly envisaged by '560 which teaches that the location of the heaters would depend on the where the bend of the glass will be made. In the instant case the location of the heaters at the center-line of the glass, is merely following the teachings envisaged by '560, which is to have placed the heaters where a bend is desired. At the time the invention was made it would have been obvious to a person of ordinary skill in the art to have placed the heaters of '560 along the center line of the glass sheet being heated by '560 in order to obtain the desired bend of the glass sheet at the center line.

As for claim 2, the heaters 88, deemed as the second group heaters, may be used to heat one portion of the glass sheet to a greater temperature than another portion and the position relative to the glass may be adjusted (Page 1, lines 54-61 and lines 70-78).

As for claims 3-4, 11-12 and 17, as noted above the crease heaters are suspended by cables 90 and 91 as shown in figure 3 and, as noted above, its distance relative to the inner ceiling wall may be adjusted in order to control the intensity of radiation being applied to the glass (see Page 1, lines 54-61 and lines 70-78).

Claims 5, 13, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 836,560 ('560) in view of Kamata (US 6,347,535). As shown in figure 9 of '560 the second group of heaters are heating plates 54. '560 is silent disclosing the heating plate is at the face side of a heater wire. However, as shown by Kamata, heating elements having a heating plate have heater wires col. 18, lines 35-42. Thus at the time the invention was made it would have been obvious to a person of ordinary skill in the art to have provided a heater wire to a heating plate of a heating element of '560 as taught by Kamata in order to provide a heat source to the heating plate. Additionally while Kamata is silent disclosing how the heating plate is arranged with the heater wire, it would be obvious to a person of ordinary skill in the art that the heating plate would be on the heating face side of the heater wire to thus be able to heat the heating plate. Hence, in view of the teachings of Kamata, conventional heating elements of a heating plate type have heater wires at its heating face side in order to provide a heat source to the heating plate.

Response to Arguments

Applicant's arguments filed 6/10/05 have been fully considered but they are not persuasive. Applicant argues drawn to GB '560 have been answered in the body of the above rejections.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is 571.272.1193. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571.272.1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to be 'LZ'.

CL